

U.S.S.N. 10/780,845 (DP-309762) - 2**LISTING OF THE CLAIMS:**

1. (currently amended) A collision detection system for a vehicle comprising:

a first sensor for sensing an object in a field of view and measuring a first range defined as the distance between the object and the first sensor;

a second sensor for sensing the object in the field of view and measuring a second range defined by the distance between the object and the second sensor; and

~~means for a controller for processing the first and second range measurements, said controller further~~ estimating a crossing location of the object as a function of the first and second range measurements.

2. (currently amended) The collision detection system as defined in claim 1, wherein the estimated crossing location has a numerical value is ~~estimated~~ relative to a location midway between the first and second sensors.

3. (currently amended) The collision detection system as defined in claim 1, wherein the first sensor includes means for determining ~~further determines~~ a first range rate and the second sensor includes means for determining ~~further determines~~ a second range rate, wherein the means for estimating further ~~controller~~ estimates the crossing location of the object further as a function of the first and second range rate measurements.

4. (currently amended) The collision detection system as defined in claim 3, wherein the means for estimating further comprises:

means for computing ~~controller computes~~ a mathematical square of the range and computing ~~computes~~ a mathematical square of the product of range and range rate for each of the plurality of measurements for each of the first and second sensors,

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means for said controller further generating a first curve based on the computations of the plurality of measurements sensed by the first sensor and a second curve based on the computations of the plurality of measurements sensed by the second sensor, and

means for said controller estimating the crossing location of the object as a function of the first and second curves.

5. (currently amended) The collision detection system as defined in claim 4, wherein the estimated crossing location of the object is ~~estimated as a~~ function of the distance between the first and second curves.

6. (currently amended) The collision detection system as defined in claim 5, wherein the means for estimating the crossing location relative to a location midway between the first and second sensors further comprises means for is estimated by dividing the distance between the first and second curves by twice the separation distance of the first and second sensors.

7. (currently amended) The collision detection system as defined in claim 1, wherein the means for estimating further comprises means for computing ~~controller computes~~ a mathematical square of range estimates for each of the first and second sensors, computing computes a difference of the squares, and estimating estimates the crossing location as a function of the computed difference of the squares.

8. (currently amended) The collision detection system as defined in claim 1, wherein the means for estimating further comprises means for dividing ~~controller further divides~~ the difference of the squares by twice the separation distance between the first and second sensors to estimate the crossing location relative to a location midway between the first and second sensors.

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9. (currently amended) The collision detection system as defined in claim 7, further comprising at least one tracking filter receiving outputs of the first and second sensors and providing the first and second range estimates to the means for computing a mathematical square of range estimates for each of the first and second sensors ~~wherein the controller comprises a tracking filter.~~

10. (currently amended) The collision detection system as defined in claim 1, wherein the collision detection system is mounted ~~employed~~ on a vehicle and is configured to estimate ~~estimates~~ the crossing location of an object relative to the vehicle.

11. (currently amended) The collision detection system as defined in claim 1, wherein the means for estimating ~~controller~~ further comprises means for generating ~~generates~~ a collision output signal as a function of the estimated crossing location of the object.

12. (currently amended) The collision detection system as defined in claim 1, wherein each of the first and second sensors ~~each~~ comprises a radar sensor.

13. (currently amended) The collision detection system as defined in claim 1, wherein the means for estimating does not include means for receiving ~~controller estimates the crossing location of the object absent an~~ azimuth angle measurement of the object.

14. – 22. (canceled)